What is claimed is:

1. An auto-tensioner for engine accessories comprising a cylinder having an open top end, a sleeve having a bottom and inserted in said cylinder, a seal member mounted to said cylinder at said open top end to prevent leakage of hydraulic oil in said cylinder, a rod slidably extending through said seal member, a plunger connected to a bottom end of said rod so as to be slidable in said sleeve, said plunger defining a reservoir chamber and a pressure chamber in said cylinder over and under said plunger, respectively, and having a passage through which said pressure chamber communicates with said reservoir chamber, a check valve provided at said passage to close said passage when a pressure in said pressure chamber exceeds a pressure in said reservoir chamber, and a return spring mounted around said cylinder to bias said rod outwardly of said cylinder, characterized in that a return chamber is defined under said sleeve so as to communicate with said reservoir chamber, said bottom of said sleeve being formed with a valve hole through which said return chamber communicates with said pressure chamber, said auto-tensioner further comprising a relief valve provided at said valve hole to open said valve hole if the pressure in said pressure chamber exceeds a set pressure.